

Claims

- [c1] A method of causing a screenout in a subterranean formation stimulation treatment comprising injecting a slurry of a proppant in a viscoelastic surfactant based carrier fluid above fracturing pressure to create one or more fractures, comprising:
- a) forming a filter cake comprising a solid base-soluble material, and
 - b) degrading the solid base-soluble material with a solid base-soluble material degradation agent while injecting a slurry of a proppant in a carrier fluid.
- [c2] The method of Claim 1 wherein the degradation agent is added during the entire treatment.
- [c3] The method of Claim 1 wherein the degradation agent is added to the slurry.
- [c4] The method of Claim 1 wherein the solid base-soluble material degradation agent is the carrier fluid.
- [c5] The method of Claim 4 wherein the carrier fluid further comprises a buffer.
- [c6] The method of Claim 1 wherein the solid base-soluble

material degradation agent is a base.

- [c7] The method of Claim 6 wherein the base is selected from the group consisting of alkali metal alkoxides, alkali metal carbonates, alkali metal bicarbonates, alkali metal hydroxides, ammonium hydroxide, and mixtures thereof.
- [c8] The method of Claim 1 wherein the filter cake comprises a fluid loss additive selected from the group consisting of water-soluble polymers, crosslinked water-soluble polymers, asbestos, starch, calcium carbonate, mica, plastic particles, solid wax, wax-polymer particles, insoluble salts, slowly soluble salts, and mixtures thereof, provided that at least one component can be broken or dissolved.
- [c9] The method of Claim 1 wherein the solid base-soluble material is selected from the group consisting of lactide, glycolide, polylactic acid, polyglycolic acid, copolymers of polylactic acid and polyglycolic acid, copolymers of glycolic acid with other hydroxy-, carboxylic acid-, or hydroxycarboxylic acid-containing moieties, copolymers of lactic acid with other hydroxy-, carboxylic acid-, or hydroxycarboxylic acid-containing moieties, and mixtures thereof.

- [c10] The method of Claim 7 wherein the solid base-soluble material comprises polyglycolic acid.
- [c11] The method of Claim 7 wherein the solid base-soluble material is mixed with a solid acid-reactive material.
- [c12] The method of Claim 11 wherein the solid acid-reactive material is selected from the group consisting of magnesium hydroxide, magnesium carbonate, magnesium calcium carbonate, calcium carbonate, aluminum hydroxide, calcium oxalate, calcium phosphate, aluminum metaphosphate, sodium zinc potassium polyphosphate glass, and sodium calcium magnesium polyphosphate glass.
- [c13] The method of Claim 11 wherein particles of the solid base-soluble material are physically mixed with particles of the solid acid-reactive material.
- [c14] The method of Claim 11 wherein the solid base-soluble material is in the same particle as the solid acid-reactive material.
- [c15] The method of Claim 14 wherein the solid acid-reactive material is surrounded by the solid base-soluble material.
- [c16] The method of Claim 15 wherein the solid base-soluble

material surrounding the solid acid-reactive material is coated with a hydrolysis-delaying material.

- [c17] A method of causing a screenout in a subterranean formation stimulation treatment comprising injecting a slurry of a proppant in a viscoelastic surfactant based carrier fluid above fracturing pressure to create one or more fractures, comprising the steps of:
- a) injecting a pad fluid that forms a filter cake,
 - b) injecting one or more first slurry stages comprising a proppant in a carrier fluid; and
 - c) degrading the filter cake with a filter cake degradation agent while injecting one or more second slurry stages comprising a proppant in a carrier fluid.
- [c18] The method of Claim 17 wherein the filter cake degradation agent is a base.
- [c19] The method of Claim 17 wherein the pad fluid comprises a member of the group consisting of solid base-soluble materials, fluid loss additives, filter cake degradation agents, and mixtures thereof.
- [c20] The method of Claim 17 wherein the one or more first slurry stages comprise a member of the group consisting of solid base-soluble materials, fluid loss additives, filter cake degradation agents, and mixtures thereof.

- [c21] The method of Claim 17 wherein the one or more second slurry stages comprise a member of the group consisting of solid base-soluble materials, fluid loss additives, filter cake degradation agents, and mixtures thereof.
- [c22] The method of Claim 17 wherein one or more of the pad fluid, the one or more first slurry stages, and the one or more second slurry stages comprise a bridging-promoting material.
- [c23] The method Claim 17 wherein the degradation agent is added to the pad.
- [c24] The method Claim 17 wherein the degradation agent is added to the first slurry stages.
- [c25] The method Claim 17 wherein the degradation agent is added to the second slurry stages.
- [c26] A method of gravel packing a subterranean formation, comprising injecting a slurry of a gravel in a viscoelastic surfactant based carrier fluid, comprising:
a)forming a filter cake comprising a solid base-soluble material, and
b)degrading the filter cake with a filter cake degradation agent while injecting a slurry of a gravel in a carrier fluid.
- [c27] The method of Claim 25 wherein the slurry comprises a

bridging-promoting material.

- [c28] The method of Claim 25 wherein a sand control screen is in place before the treatment.
- [c29] The method of Claim 1 wherein one or more of the pad fluid, the one or more first slurry stages, and the one or more second slurry stages comprise a bridging-promoting material.
- [c30] A viscoelastic well treatment composition comprising water, a viscoelastic surfactant, and a solid base-soluble material.
- [c31] The composition of Claim 30 further comprising a base.